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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,940	11/21/2001	Vladimir Pavlovic	23390-000103	1545

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EXAMINER

LUK, LAWRENCE W

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,940

Applicant(s)

PAVLOVIC ET AL.

Examiner

Lawrence W Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-10 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-10 and 14-20 is/are allowed.
- 6) ☒ Claim(s) 3 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heavey (5,307,001) in combination with Hara (JP 07073903 A).

As to claims 3 and 13, Heavey discloses the elements and method as claimed. Heavey shows an apparatus for charging a rechargeable lead-acid battery, said apparatus comprising: generator means for generating a charging current for charging the battery, and an overcharge current increment to be added to the charging current to yield an overcharge current; and, controller means for controlling said generator means, said controller means including (a) feedback means for determining at least one of a charge acceptance ability and a state of charge of the rechargeable lead-acid battery during recharging (refer to col.17, lines 11-37); (b) overcharge instruction means for determining the overcharge current, the overcharge current exceeding the charge acceptance ability of the battery (refer to col.17, lines 15-22); and (c) current control means for controlling the generator to supply the charging current and the overcharge current increment, the current control means being operable to deliver the overcharge current to the battery during charging (refer to col.17, lines 23-37), but fails to teach the

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overcharge time is determined to be after the state of charge of the lead-acid battery reaches 60%.

Hara disclose in constitution page 2, the overcharge time is determined to be after the state of charge of the lead-acid battery reaches 60%.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Heavey to include the overcharge time is determined to be after the state of charge of reaches 60%. as taught by Hara to realize charging without lowering energy efficiency.

Allowable Subject Matter

3. Claims 4-10 and 14-20 are allowed.

As to Claim 4 and 14 are allowable. The reason for allowance is that the prior art of record fails to teach or reasonably suggest the overcharge duration is between a half minute and five minutes, and the overcharge current exceeds the charge acceptance ability of the lead-acid battery by less than one fifth of the battery capacity and by more than one twentieth of the battery capacity;

As to Claims 5 and 15 are allowable. The reason for allowance is that the prior art of record fails to teach or reasonably suggest the overcharge instruction means determines a plurality of overcharge times, an associated overcharge current for each overcharge time, and an associated overcharge duration for each overcharge time; the associated overcharge duration for each overcharge time being between a half minute and five minutes; and, the associated overcharge current for each overcharge time

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exceeds the charge acceptance ability of the lead-acid battery at the overcharge time by less than one fifth of the battery capacity and by more than one twentieth of the battery capacity.

Claims 6-10 and 16-20 are allowed due to their dependency on claims 5 and 15.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Luk whose telephone number is (703)305-0617. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7724 for regular communications and (703)305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

LWL
November 25, 2003

Lawrence Luk
examiner
11/25/03